

ATMOSPHERIC ELECTRICITY.

Numerical statistics relative to auroras and thunderstorms are given in Table X, which shows the number of stations from which meteorological reports were received, and the number of such stations reporting thunderstorms (T) and auroras (A) in each State and on each day of the month, respectively.

The dates on which reports of thunderstorms for the whole country were most numerous were: 6th, 253; 11th, 268; 28th, 208.

Thunderstorm reports were most numerous in Ohio, 298; North Carolina, 202; Missouri, 199; Florida, 194; Colorado, 192; Pennsylvania, 180; Louisiana, 178.

Thunderstorms were most frequent in Florida and Louisiana, 31 days; Colorado, Mississippi, and New Mexico, 28; Alabama and South Carolina, 27; Minnesota, North Carolina, Tennessee, and Texas, 26.

Auroras.—The evenings on which bright moonlight must have interfered with observations of faint auroras are assumed to be the four preceding and following the date of full moon, viz, from the 1st to the 8th, inclusive, and also the 30th and 31st. On the remaining twenty-one days of this month 89 reports were received, or an average of about four per day. The dates on which the number of reports especially exceeded the average were: 9th, 29; 11th, 14; 18th, 12.

Auroras were reported by a large percentage of observers in North Dakota, 40 per cent; Minnesota, 26; Wisconsin, 22.

Auroras were reported most frequently in North Dakota, 7 days; Minnesota, New Hampshire, and Wisconsin, 6.

DAMAGE BY LIGHTNING.

The statistics of casualties by lightning so far as concerns

property, are fairly well given in the preceding section on local storms by Mr. A. J. Henry. The injuries done to individuals, as furnished by Mr. Alexander McAdie, are as follows:

First decade: killed, 18; injured, 27. Second decade: killed, 28; injured, 35. Third decade: killed, 20; injured, 32. Total for the month: killed, 76; injured, 84.

INLAND NAVIGATION.

The *extreme and average stages of water* in the rivers during the current month are given in Table VII, from which it appears that the only river that has reached the danger line was the Red River, at Shreveport, La., on the 1st. Other rivers that rose rather high were the Arkansas, which reached a maximum on the 1st and 3d, and the Savannah which was highest at Augusta on the 23d. The average stage of the Missouri, upper Mississippi and the Ohio rivers, and their tributaries has been remarkably low, greatly interfering with navigation.

METEOROLOGY AND MAGNETISM.

For general remarks relative to this subject see page 7 of the REVIEW for January, 1895.

The comparison of the air temperature with magnetic horizontal force is shown in detail on Chart V, and the special features of the August curves are as follows:

The correction for slope is $+1$ for the horizontal force at Toronto and Washington. The reduction to a mean base line is $+6^\circ$ for temperature, and $+2$ for magnetic force. For the dates August 9 to 13, inclusive, being days of wide amplitude, the resulting values of magnetic force are divided by 2, in order to preserve a convenient diagram.

STATE WEATHER SERVICES.

The following extracts in regard to the general weather conditions in the several States and Territories are taken from the monthly reports of the State Weather Services.

Snowfall and rainfall are expressed in inches.

Alabama.—The month as a whole was one of frequent showers and continued warmth with considerably more than the average amount of cloudiness. There was not a single day on which rain did not fall in some portion of the State. The continued moisture seriously retarded the fruitage of cotton. No severe storms occurred and but very little damage resulted to the abundant corn and other crops.

Arkansas.—The monthly mean temperature was 1.0° above the normal and the rainfall was 0.66 less than the usual amount. The month as a whole was very unfavorable for cotton. In the early part of the month heavy showers occurred in most parts of the State, which prevented farmers from cleaning their crops and also induced a very rank growth of the plant, and complaints were numerous of the plant not fruiting well. The corn crop promises well, though the late planting would have been better with seasonable rains during the middle and latter part of the month. The weather has been very favorable for saving fodder and haymaking. At the close of the month rain was much needed for late potatoes and fall gardens generally, and in some sections pastures were failing and water becoming scarce.

California.—The mean temperature for the State was 0.7° below the normal and the rainfall normal. Thunder and lightning occurred at Bodie on the 12th; Shasta on the 19th; Greenville, Quincy, and Edmanton (all in Plumas County), on the 26th; Iowa Hill on the 27th, and Yreka on the 28th and 29th. Light frosts were reported from Bodie on the 3d, 8th, 9th, 10th, 13th, 14th, 19th, 20th, and 26th; Greenville on the 16th, 17th, 19th, 22d, 26th, and 31st; Quincy on the 17th, 18th, and 26th; and Julian on the 27th. Killing frosts were reported from Bodie on the 1st, 15th, 16th, and 17th; Julian on the 28th and 30th; and Greenville on the 27th.

Colorado.—The month was slightly warmer than the average, the mean temperature being about one degree above the normal. The mean precipitation for the State was nearly half an inch greater than the normal. Rainfall was generally in excess over the mountain districts, San Luis Valley, and Otero and Bent counties, but over limited

areas in the eastern border counties, the upper Arkansas and Platte Valleys the amounts recorded were less than usual.

Connecticut.—(See *New England*.)

Delaware.—(See *Maryland*.)

Florida.—The mean temperature, 81.3° , was 0.5° less than the normal. The highest temperature, 99° , was recorded at Earnestville on the 20th, and the lowest, 60° , at Moseley Hall on the 27th. The average precipitation was 6.20, or 0.43 less than the usual amount. The greatest amount, 9.92, was reported from Orange Lake, and the least, 1.08, from Amelia. Thunderstorms were frequent in all sections of the State.

Georgia.—The average precipitation from the records of 59 stations was 7.55, ranging from 15.38 at Dahlonaga, to 3.99 at Columbus. The total rainfall at Atlanta, 8.55, was about 1 inch more than that for any August during the past 17 years at that station. The average temperature for 51 stations was 79.1° . The highest temperature, 100° , was recorded at Millen on the 20th, and the lowest, 47° , at Clayton on the 2d.

Idaho.—The mean temperature for the State was 65.8° . The highest daily temperature, 106° , was recorded at Lewiston on the 2d, and the lowest, 24° , at Hailey on the 9th. The average total precipitation was 0.25; the greatest amount, 1.09, occurred at Grangeville, and the least (no rain) was reported from American Falls, Kootenai, and Murray. Thunderstorms were frequent in several sections of the State. Frosts were reported at Chesterfield on the 9th, 10th, 11th, 14th, 26th, 30th, and 31st; at Hailey, 9th; Martin, 7th, 19th, and 26th; Murray, 14th; Paris, 9th; St. Anthony, 9th, and 16th; Salubria, 10th and 14th, and Swan Valley, 9th, and 10th.

Illinois.—The dry period, which began July 30, continued practically unbroken until the 23d, although a few thundershowers occurred on the 5th, 6th, 10th, and 11th, and in central and southern sections, the 18th to 20th. The average total precipitation was 2.85, or 0.16 below the normal. The greatest fall occurred in the northeast corner of the State, Chicago reporting 6.49; La Grange, 5.69; Oswego, 5.00; Wheaton, 4.99; Aurora, 4.80; and St. Charles, 4.35. The least occurred in the extreme southern part, Cairo reporting but 0.71; east-central counties were also largely deficient in rainfall. The temperature was nearly 2° a day above the normal and added much to the drought conditions. The greatest heat came during the week from the 9th to 17th, a second warm period coming in from the 23d to 28th. Cool periods occurred from 1st to 3d, 19th, to 21st, and 29th to 31st.